


10-1-2003

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Recommended Citation

(2003) "BS News," *Building Services News*: Vol. 42: Iss. 9, Article 1.

Available at: <https://arrow.tudublin.ie/bsn/vol42/iss9/1>

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BSN News

MECHANICAL & ELECTRICAL BUILDING SERVICES

OCTOBER 2003

INDUSTRIAL & COMMERCIAL HEATING

NCRL

Making Sound Sense
of Sound Waves

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ENGINEERING**

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The fastest underwater hunter is the shark. Its skin possesses excellent characteristics which enable the resistance to tides and currents to be minimised. The skin's surface is not smooth but scaly. Today airbuses are encased in a similarly-structured film, which results in a saving of up to 10% of kerosene. Mother Nature demands top performance at all times in all places while expecting, at the same time, the lowest energy consumption. This is the ambitious goal that WILLO also aims at in its research and development programmes. With its high-efficiency pump, Stratos, WILLO has introduced a new yardstick.



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ISSN 0791-0878

Published by:

Pressline Ltd,
Carraig Court,
George's Avenue,
Blackrock, Co Dublin.
Tel: 01 - 288 5001 / 2/3 Fax: 01 - 288 6966
ISDN: 01 - 211 2338/9
email: bsnews@pressline.ie
Website: www.buildingservicesnews.com

Editor: Pat Lehane**Advertisement Director:** Joe Warren**General Manager:** Louise Byrne**Origination and Design:**

Pressline Ltd. Tel: 01 - 288 5001

Subscription: One Year — €65**Printed by:** Kilkenny People Printers.

© All editorial contents and all
advertisements prepared by the publishers,
Pressline Ltd.

* Incorporating Irish Heating & Ventilating
News.

Readership Data

Irish Building Services News (formerly Irish H&V News) is Ireland's only Building Services magazine providing coverage of heating, ventilating, air conditioning, refrigeration, sanitaryware, plumbing, maintenance and environmental industries. It is the only publication catering exclusively for these industries and its circulation includes members of the following:-

Chartered Institution of Building Services Engineers (CIBSE); The Mechanical Engineering & Building Services Contractors' Association (MEBSCA); The Association of Consulting Engineers of Ireland (ACEI); The Mechanical Engineering Contractors' Association; The Institute of Domestic Heating Engineers (IDHE); The Registered Heating Contractors Association; The Maintenance, Energy & Environmental Technology Association (MEETA) which incorporates energy managers and maintenance managers; The Energy Conservation & District Heating Association; The Institute of Plumbing; The Irish Home Builders Association (IHBA); Builders Merchants/Trade Supply Outlets; Irish Property & Facilities Managers Association.

In addition, Irish Building Services News circulates to independent building services contractors and key executives in industry, Government, Semi-State and local authority bodies. Essentially, our circulation is virtually saturation coverage of all those with an interest and/or involvement in the industry.

O P I N I O N

Electrical Services Engineering

While mechanical and electrical services are still very clearly-defined and separate, recent years have seen the dividing line blurred somewhat by the emergence of cross-over technologies, especially in respect of building management and control systems. Industry in general has been aware of this gradual transformation but, to date nothing significant had been done to deal with it.

Now all that has changed thanks to the initiative of Kevin Kelly and his colleagues in DIT Kevin St. Electrical Services Engineering is now recognised as a discipline in its own right, much to the relief of consultants, manufacturers, and those in technical sales. CIBSE fully supports this development and is anxious that building services *per se* is now seen to encompass mechanical, electrical, and electrical services engineering.

BSNews has always worked closely with CIBSE and has further strengthened that association by way of the inclusion of a separate section devoted to electrical services engineering and related areas. This will appear in every issue and take the form of technical articles, along with a separate column by Kevin Kelly on electrical services engineering education and training. We begin with a reiteration of the CIBSE programme and a full report on the recent electrical services engineering student awards at DIT Kevin St (page 30).

I N T H I S I S S U E

Trade News & Product Information	2
Lecturer Wins Award	14
CIBSE Programme	16
NCRL — Making Sound Sense of Sound Waves	17
Commercial & Industrial Heating	21
BTU — Old Conna	29
Electrical Services Engineering	30
Property & Facilities Management	32
Specifying Sound Quality	34
Plumb Lines	36

Samsung Knows its Anions!



Samsung split air conditioner from Walkair, incorporating easy-to-view circular LED display which allows the user to monitor the "health" of the room and so maintain the ideal environment

Yes anions, not onions!. According to Samsung, vast quantities of anions are generated in nature, for example in forests or by waterfalls. Anions are powerfully refreshing, both physically and mentally, but they are in short supply in urban and built up areas because of air pollution from many sources. Consequently, Samsung air conditioners are equipped with an ozone-free anion

generator (1.25 billion anions per second) to fill the room with anions.

The full range of Samsung air conditioners is now available from Walkair Ltd (see *BSNews* September 2003) and caters for a very broad range of applications. It includes splits, multi-splits, window type units, and floor-standing models. All are designed for maximum performance while, at the

same time, being extremely energy-efficient. Indeed, Samsung air conditioners are accredited with Energy Label A, the highest possible ranking, in the energy-labelling system now being applied by the EU, according to Vincent Mahony of Walkair.

Under this system all air conditioners are ranked in descending order from A to G according to their energy-saving performance. The classification is based on the energy efficiency ratio (EER) which is the ratio of the cooling capacity (Btu per hour) to energy input (watt). Samsung air conditioners' EER is 11.00 and thus the Energy Label A rating.

Contact: Vincent Mahony, Walkair.
Tel: 01 - 456 8070;
email: vmahony@walkair.ie

Refrigerant Handling — City & Guilds Qualification

Refrigerant Handling — City & Guilds 2078 Training & Assessment — is the title of a new qualification developed by Refrigeration Technology Skillnet to reflect the standards of BS4434 and the similar European Standard EN378. Both deal with safety aspects in relation to the design, construction and installation of refrigerating appliances.

Candidates for assessment for C&G 2078 must demonstrate that they are competent to handle refrigerants, including both charging and recovery. They must also show their awareness of the hazards of using such refrigerants to themselves, to other people, and to the environment.

Refrigeration Technology Skillnet has made arrangements for a qualified City & Guilds assessor to carry out assessments for a limited number of candidates and devised a comprehensive educational package to assist candidates in preparing for this assessment.

Contact: Enda Hogan, Refrigeration Technology Skillnet.
Tel: 01 - 878 3773;
email: enda.hogan@dit.ie

CoolRite On-Line



CoolRite Refrigeration Ltd, the Dublin and Cavan-based air conditioning and refrigeration company, officially launched its website last month. With such an extensive range of products and services, www.coolrite.ie acts like

a road map through all that the company has to offer.

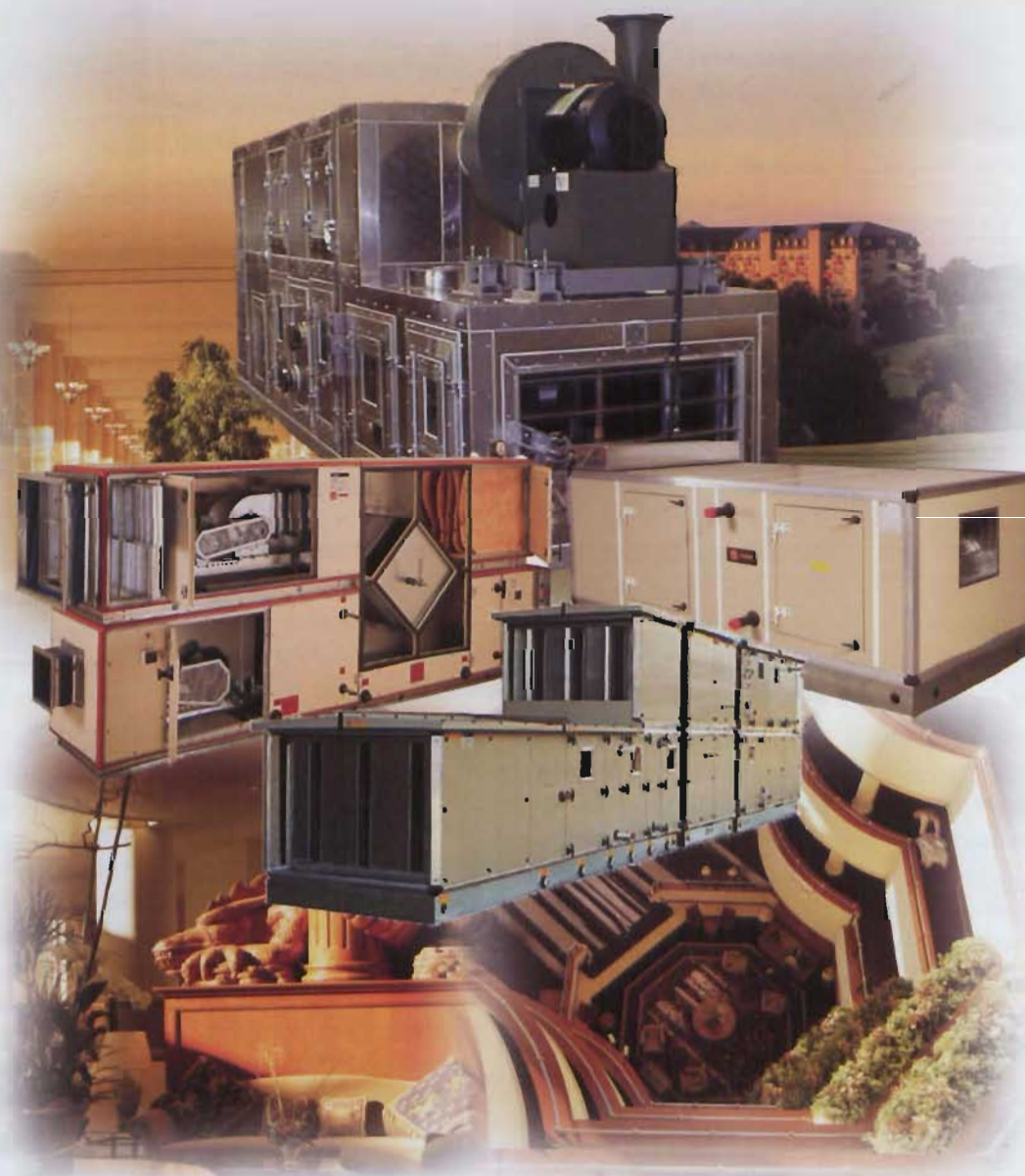
Client shortlists, recent projects and product samples are an integral part of the site. There is also a link to Hitachi Air Conditioning as CoolRite Refrigeration Ltd is a

major stakeholder in Ardline Aircon, the sole distributor for Hitachi in Ireland.

John Brogan and Norbert O'Reilly, CoolRite Refrigeration directors state: "We want people to know who we are, what we can do and who we have done it for. When you work with companies such as Musgraves Supervalu Centra, Londis, BWC, Lakeland Dairies, Cargil Integra, Nuremore Hotel & Leisure Centre and, most recently, the Blanchardstown Centre, you like to shout about it. A strong work ethic is at the core of our business, www.coolrite.ie allows us to show off some of our work and at the same time promote our business."



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KMC Offers Performance, Style & Efficiency

The new Carrier KMC cassette range of air conditioning systems has been designed to fit exactly in the space of standard ceiling panels, making it easy and quick to install. Ideal for commercial applications such as the ceiling voids in retail outlets and modern offices, the unit replaces one panel resulting in an easy, modular installation that looks stylish and discreet.

Operating on R104A refrigerant, KMC cassettes give high performance yet are low on energy consumption, with the added advantage of having zero ozone depletion potential.

Constant air renewal is assured via the fresh air inlet while the motorised louvres allow six selectable airflow directions, including continuous sweep and automatic, with 4-way distribution management.

Acoustic performance is claimed to be near perfect, thanks to its centrifugal fan with patented blades, the new heat exchangers, and improved air management system.

There is also an advanced high-efficiency purification

system containing a titanium catalytic filter which regenerates in sunlight.

The innovative electronic interface control system comprises one single electronic board incorporating standard and business features such as communication network, wired remote control, multisplit compatibility, electric heater compliance, and condensate pump fault-finding.

The small, wall-mounted, Room Controller serves up to six units within the same operating setting while the Zone Manager can control and programme up to 32 different indoors units in eight independent zones. My Comfort is an infrared remote control which holds preferred settings in memory.

Maintenance is also simple with all critical components — such as the filters, air temperature sensor, fan, wiring and integral condensate drain pump — easily accessible via the grille.

Contact: Austin McDermott or Dave Hill, Core Air Conditioning. Tel: 01 - 409 8912; email: info@coreac.com

Aquacell Storm Fights Climate Change

The recent Environmental Protection Agency (EPA) report, "Climate Change", has highlighted the fact that Ireland is facing into wetter winters and more severe flooding with rainfall increasing by 10%. Consequently, storm water management is now a requirement of planning regulations meaning new and existing housing and industrial sites must take these climatic changes into account.

Wavin's Aquacell Storm Water Management System has established itself as an effective solution for contractors dealing with this issue. Two recent sites show the versatility of the system. Over 600 m³ of Aquacell has been installed on a housing site at Mornington Manor in Co Meath and over 1600 m³ is currently being installed at a mixed site of 35 apartment blocks and 36 houses at Blackglen Road in south Dublin.

The Aquacell system is made up of individual polypropylene modules assembled together to form an underground structure used for storm water storage or as a soakway. Conventional pipework is connected to the units by means of a number of adaptors. The units are wrapped in a geomembrane and topsoil or hardcore placed on top to make an amenity area or car parking facility



Wavins Aquacell Storm Water Management System

within the site.

A chamber controls flow volumes in a downstream pipe, or directs excess flows to storage or soakways. Either a Wavin Garastor or a concrete chamber with a Wavin orifice plate can be used. When storm water volume exceeds conventional drainage capacity it is intercepted by the control manhole. The water is channelled into the assembly of infiltration units that form the storm water reservoir. The interior profile of each modular unit is designed to bring surging water under control and hold it in temporary storage.

The geotextile wrapping of the assembled units may be permeable, allowing controlled release of the collected storm water into the local ground water.

Contact: Wavin Ireland. Tel: 01 - 841 500; email: info@wavin.com

Innovative Off-Site Bathroom Construction

Delta Homes (Ireland) Ltd, Ireland's first indigenous off-site manufacturer of quality pods and house extensions, recently announced the creation of 100 jobs at its new 40,000 sq ft manufacturing facility at Cobh Dockyard, Co Cork. The company has successfully identified a niche for off-site construction solutions in Ireland and is increasing its workforce to help meet market demand. Delta is the first company in Ireland to manufacture bathroom pods and modular house

extensions in a factory environment and deliver them fully finished to site.

There are presently approximately 7,000 bathroom pods imported into Ireland each year for hotels, apartments and student accommodation. So, in addition to the creation of new jobs, there is a significant level of import substitution.

While officiating at the opening of the new facility in Cobh Dockyard last month, Tánaiste Mary Harney, TD, Minister for Enterprise, Trade & Employment



said: "I wish to congratulate Delta Homes for its innovation and enterprise in providing off-site manufactured solutions to the construction industry. I welcome this development and any import substitution

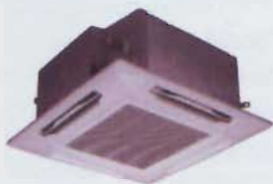
opportunities that this project may provide.

The company is currently producing 150 bathroom/utility pods for PJ Hegarty & Sons and recently completed a pilot project for modular house extensions for the Cork City Council.

Toshiba launches a new range of energy-efficient air conditioning units

The Digital Inverter from Toshiba combines economy and ecology in a smart body. It offers state-of-the-art technology, exceptional energy savings, high performance, easy installation and flexible control. The latest digital inverter technology ensures smooth start-up and capacity control for optimum comfort. A choice of indoor units includes cassettes, ducted, under-ceiling, wall-mounted and floor-mounted units.

It is mandatory that all air-conditioning systems (up to 12.5kW) are energy labelled from January 2004. The Digital Inverter range from Toshiba offer some of the best energy efficiency ratios on the market.



Four-way cassettes



Ducted units



Console and under-ceiling units



High-wall units



TOSHIBA
AIR CONDITIONING

GT Phelan Ltd, Unit 30, Southern Cross Business Park, Bray, Co Wicklow.

Tel: 01 - 286 4377 Fax: 01 - 286 4310 email: gtphelelan@eircom.net Web: www.gtphelelan.ie

Marren Appointment On-line Valve Selection & Maintenance



Malcolm J Goggin has been appointed Business Development Manager at Marren Engineering. He has extensive experience in the gas and electric appliance industry, in addition to the ICT sector. Malcolm is an MBA graduate of the Smurfit Business School, UCD, and is an accomplished Irish international track cyclist. He will lead Marren Engineering's development of the McQuay Air Conditioning brand.

Fagerhult emLED Lighting

Fagerhult has taken the next step in the technical development of emergency lighting with emLED, a concept based on the use of a high-intensity, light-emitting diode. This technology permits emergency conversion where previously — because of size and heat restrictions — many luminaires could not be converted for emergency use.

emLED increases personal safety as the emergency light is created from a light source with an extremely long life and is not used in normal operation. Accordingly, the risk of the emergency light failing due to a burnt out light source is virtually non-existent.

emLED is available in two versions — one that is integrated into a luminaire, or as a stand-alone product in surface or recessed version. The



emLED lighting from Fagerhult

small diameter of the stand-alone unit, at 100mm, is an added advantage while the unit embedded in an existing luminaire is only 25mm in diameter. emLED has the additional benefit of self-testing.

Contact: Jack Roy,
Project Lighting.
Tel: 01 - 280 6099;
email:
info@projectlighting.com

RN Murphy Moves

Consulting engineers RN Murphy have moved to new offices. They are now located at Portview House, Thorncastle

Street, Dublin 4.
Contact: Tel: 01 - 665 8600;
email:
rnmurphy@rnmurphy.ie

Honeywell has introduced a new online resource for selecting, sizing and maintaining water control, pressure reduction and backflow prevention valves. Designated www.honeywell-valvesizing.com, the site features a calculation programme, animated examples of applications and products, videos showing maintenance procedures, and a wealth of technical data.

The calculation programme determines the model and size of the ideal valve — control, pressure regulation or backflow prevention — for each application, with its

appropriate filter. Clear animated graphics answer questions such as "What valve do I need?"; "How does it work?"; and "How is it used?" Service engineers will value the real-time videos, showing disassembly and assembly, and the cutaway product drawings which call up a photo and description of each component as the cursor is moved over the valve.

Specification sheets can be downloaded from the site as PDF files.

Contact: Visit the site to register free of charge or email: water.control@honeywell.com

IEI Wants Changes!

The Government should establish a one-stop approval body for the construction of major infrastructural projects which would combine the current separate functions of the Local Authorities, the EPA, the Health & Safety Authority, Government Departments and Bord Pleanála.

Furthermore, a special division of the High Court should be set up to deal with all legal challenges to these projects, and the public consultation process around such projects should be streamlined.

These recommendations are made by The Institution of Engineers of Ireland (IEI) in a submission to Government on the

Critical Infrastructure Bill proposed to overcome the massive delays in vital roads, energy, waste, water supply and communications projects arising from the current convoluted planning system, which is also adding millions to the cost of securing approval.

Pointing out that the World Competitiveness Yearbook in May this year ranked Ireland 28th of 29 countries for infrastructure development, the Director General of the IEI, Mr. Paddy Purcell, said the present planning and regulatory process "is too convoluted and costly".

Contact: Paddy Purcell, IEI Director General. Tel. 01-6684341.

No Power? No problem!



Sanyo's new GHP - the problem solver

All the benefits of VRF air conditioning with no need for a 3-phase supply!

- Technically the Sanyo **GHP** is just like a traditional R407c VRF system: It provides all the power, control, flexibility and quality you'd expect from Sanyo and connects to our standard range of indoor units.

A common controls protocol means it can share the same network as electric ECO-Multi and SPW split systems. This also allows it to be integrated into most building management systems.

The biggest difference is that it is powered by Gas.

With a capacity range from 8hp (22.4kW) to 20hp (56.0kW), the outdoor unit can connect to 24 indoor units with extended pipe runs of up to 120m. With less maintenance (10,000 run hours), no defrost cycle required and 100% heating capacity at -15°C , the Sanyo **GHP** marries reduced running costs with excellent performance. It can even operate on bottled LPG so wherever you are there is a real VRF solution.

Single phase DC Inverter fan motors ensure that the very minimum of electrical supply is needed, therefore GHP meets all your VRF air conditioning wants without the requirement of a 3-phase electrical supply. Where power is a problem the Sanyo GHP is worth the additional investment.

With Sanyo **GHP** you have the power.



SANYO

AIR CONDITIONERS 9

For more information email ghp@sanyoaircon.com

Haier Special Offers



Haier cassette from Core Air Conditioning

Haier is the fifth largest manufacturer of consumer goods in the world with year-on-year growth of something like 80% over the last 17 years. Its impact on the air conditioning sector is growing at a considerable rate with something like six million units produced last year.

The Haier air conditioning range is extensive and includes

MRV multi-split systems; ceiling and floor-standing units; cassettes; ducted models; wall-mounted models; and window and mobile units.

Austin McDermott of distributors Core Air Conditioning has selected a unique mix from within the portfolio to cater specifically for the requirements of the Irish marketplace. Now, to mark the first anniversary of the range being formally launched in Ireland, Core has put together a number of special offers on selected cassettes for a limited period only.

Contact: Austin McDermott or Dave Hill, Core Air Conditioning. Tel: 01 - 409 8912; email: info@coreac.com

SRK High COP From 3D



Mitsubishi Heavy Industries' SRK R410A advanced high-performance cooling/heat pump system from 3D Air Sales

According to Michael Clancy of 3D Air Sales Mitsubishi Heavy Industries has made a quantum leap forward in air conditioning and heat pump technology with the introduction of high-performance SRK wall-mounted air conditioning systems using R410A refrigerant.

"The advanced SRK systems represent the latest technological achievement in significantly increasing efficiency and COP", according to Michael, "with a COP figure of 3.62 being achieved on the new SRK25ZB inverter split system and

Carbon Monoxide Monitor

The Dwyer Series 450 carbon monoxide monitor from Manotherm provides a simple and cost-effective solution for monitoring toxic carbon monoxide gas in ambient air. A beacon of light flashes simultaneously with an audible alarm in correspondence to the level of carbon monoxide concentration detected in the air. Quick air quality checks are easy and hands-free ... simply walk through a building using the CO monitor.

Series 450 is especially suited to industrial and commercial HVAC applications such as boiler room inspections, while it is equally applicable to domestic installations such as chimney, oven and home appliance testing.

There is also an Aspirator Kit for situations involving inspection in confined spaces such as monitoring the flue in exhaust stacks.

up to 3.61 on the standard models".

Mitsubishi Heavy Industries has used innovative compressor design and the ozone-friendly R401A refrigerant, combined with its new "jet-flow" low noise air movement fan arrangement, to achieve these performances. The result is claimed to be a high-performance cooling and heating system, with advanced electronic controls for maximum comfort and



The Dwyer Series 450 carbon monoxide monitor from Manotherm

The battery-powered unit measures carbon monoxide levels of 0-2000 parts per million (PPM) and is housed in an extremely rugged aluminium casing. The sensor maintains a 3% of reading accuracy with a response time of less than 30 seconds.

Contact: Bob Gilbert, Noel Walsh or Robert Gilbert, Manotherm. Tel: 01 - 452 2355; email: manotherm@eircom.net

controlability.

Other features include infra-red controller with mounting bracket; pipe runs of up to 15m; back-up switch for loss of controller; cold draft prevention on heat pump start up; fault diagnosis; auto re-start after power interruption; and low noise --- 24dBA on smaller models.

Contact: Michael Clancy, 3D Air Sales. Tel: 01 - 462 7570; email: micclan1@eircom.net

SRK High C.O.P

Advanced High Performance
Cooling/Heat Pump Systems

R410A



MITSUBISHI HEAVY INDUSTRIES has made a giant leap forward in air conditioning & heat pump technology, with the introduction of high performance SRK Wall Mounted air conditioning systems, using R410A refrigerant.

The **ADVANCED** SRK Systems represent the latest in technological achievement in significantly increasing the efficiency and COP (coefficient of performance). A remarkable COP figure of 3.62 has been achieved on the new SRK25ZB INVERTER split system, and up to 3.61 on the standard models.

MITSUBISHI has used its innovative technology of compressor design and the ozone friendly R410A refrigerant, and combined this with their new "jet-flow" low noise air movement fan arrangement. The result is a quiet, high performance cooling and heating system, with advanced electronic controls for maximum comfort, and controllability.



3D Air Sales (Ireland) Ltd,

Unit 8, Greenhills Business Centre,

Greenhills Industrial Estate, Tallaght, Dublin 24.

Tel: 01 - 462 7570

Fax: 01 - 462 7611



MITSUBISHI
HEAVY INDUSTRIES, LTD.

The Taxi Plumber

The Institute of Plumbing in South Africa recently had an interesting membership application from an African plumber in Johannesburg. He arrived for his appointment two hours late, explaining that he had had to catch three different taxis to get to the IOP office.

His plumbing and business qualifications were fine and for the record, the IOP asked how many vehicles he had. He proudly announced that he had none! Asked how he could possibly transport himself and his material to site, the plumber replied, "That's easy, I take a taxi to the plumbing merchant, load the material onto the roof rack and then catch the taxi to site." After working all day he catches another taxi home.

Oh yes, and he also doesn't have an office: he carries all his paper-work, invoices, accounts, etc in a battered old briefcase, communicates by mobile phone and is quite happy to spend some 460 hours a year in a taxi!



Air conditioning is now a key selling point when new businesses are looking for serviced office accommodation.

Typically aimed at start-up businesses and those who want to move from a home-based operation, these buildings provides cellular offices ranging in size from an average of 125 sq ft to 550 sq ft, as well as a meeting room, coffee lounge, reception and communications room.

Naturally, energy efficiency is a key concern, especially for the building owner. Tenants often push down the temperature and leave it on, which pushes up costs unnecessarily. However, Sanyo provides a solution which allows the set temperature control band to be reduced on the remote controllers. By setting it at a realistic 20-24°C, the system is no longer open to abuse. Moreover, because it is simply a control set up it is easily reversed and comes at no extra cost.

In tackling a recent project set on three floors and providing 20 rooms of the scale detailed above, Sanyo set about coming up with a solution that would deliver the perfect balance between the clients requirements and their tenants demands. As the design team at Sanyo got to work it became clear that the most obvious solution, a combination of split systems and small multi-split systems, would not be practical in this situation.

"Space for the outdoor condensing units was extremely restricted so using the minimum number of outdoor units became a key criteria," explained Barry Hennessy, Sanyo's National Manager.

Consequently, the solution devised consisted of three Eco-Multi systems, one for every floor, each feeding up to nine 4-way cassette units, and a separate high-wall split system for the comms room. As

Barry explains: "It was a natural choice because the outdoor unit is the smallest on the market. Not only that, the solenoid valve kit needs no power supply of its own as it takes its power from the nearest indoor unit so it's incredibly simple and quick to install."

With Sanyo the indoor units are common throughout the 2-Pipe, 3-Pipe and Split ranges. This ensures visual consistency and also makes it possible to use a common controls package throughout. All the indoor units have their own independent remote controllers but, at the same time a single system controller and weekly time clock out of public view in the electrical room enables the entire system to be programmed centrally and shutdown completely at night so power is not wasted.

Creating a pleasant working environment requires a good fresh air supply so ventilation and extract requirements were given careful consideration alongside energy efficiency. The design avoids the heat loss that occurs when extracting air-conditioned air and supplying fresh air by incorporating two heat exchangers to recover potentially wasted heat. Both the systems are controlled independently so, if need be, ventilation can be selected without operating the air conditioning system.

Contact: Barry Hennessy, Sanyo Air Conditioners Europe. Tel: 01 - 456 8910; email: b.hennessy@sanyo.ie

Hydro Multi-E

Innovative pressure booster systems for residential buildings

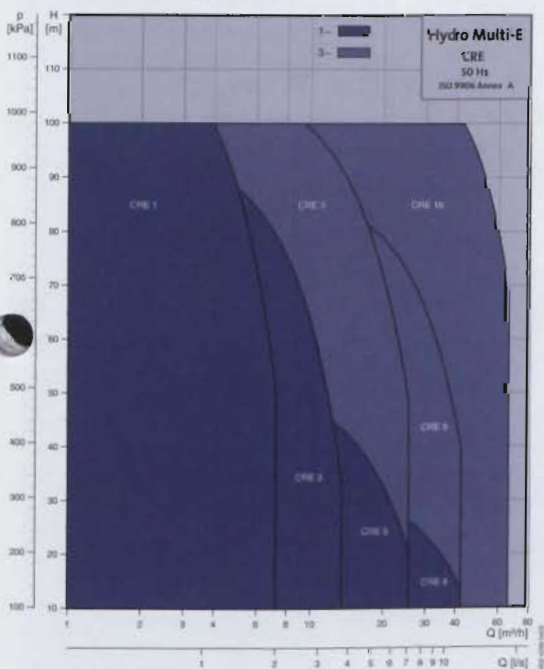
Simple installation and operation

Hydro Multi-E pressure booster systems from Grundfos are supplied thoroughly tested and ready to install. The set point is easily adjusted from the control panel and the advanced control takes care of other adjustments to maintain constant pressure and optimum comfort.

Customer benefits second to none

The Hydro Multi-E range offers outstanding benefits. The Grundfos CRE pumps are renowned worldwide for their extremely high efficiency and reliability. The micro frequency-controlled (speed-controlled) motors provide unique control functionality, which increases the comfort of the user and decreases operating costs. High quality materials are used throughout.

Performance Range



Advantages at a glance

- > 2 or 3 Grundfos CRE variable speed pumps in parallel
- > Communication between pumps and control via GENIbus
- > Simple installation and operation – Install 'n' Pump
- > Optimum comfort via variable speed pumps
- > Competitive price



Grundfos (Ireland) Ltd, Unit 34 Stillorgan Industrial Park, Blackrock, Co Dublin.

Tel: 01-293 4926 Fax: 01-295 4739

Published by ARROW@TU Dublin, 2003
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Architect's Challenge Golf Club



Frank Branigan, CCF Branigan with Jennifer O'Shea, Jacobs International; Anthony Logue, Jacobs International; and Adele Marrey, Ecophon Acoustic Ceilings

August 2003 saw the first inaugural CCF Branigan Architects Challenge Cup for golf in Ireland sponsored by Ecophon Acoustic Ceilings. A good day was had by all with over 40 architectural practices invited to play in the four ball Stapleford competition with two people making up each team.

This year's venue was Newlands Golf Club, Dublin with the first prize of John Rocha Waterford Crystal and the Architects Challenge Cup going to Michael O'Carroll of Murray O'Laoire, Dublin and Nick Butler of Murray O'Laoire, Limerick. Second prize went to Anthony Logue and Jennifer O'Shea of

Jacobs International. Both vowed to return next year and expressed their determination to win.

Frank Branigan, Managing Director of CCF Branigan Ltd comments: "The competition saw many of the top architectural firms enjoy a great day golfing. Some were enjoying the intense competition and others enjoying the chance to meet and socialise with fellow architects which their busy schedules wouldn't normally allow. Both CCF Branigan and Ecophon Acoustic Ceilings look forward to hosting the second annual Architects Cup next year."



Frank Branigan, CCF Branigan with Michael O'Carroll, Murray O'Laoire; Nick Butler, Murray O'Laoire; and Adele Marrey, Ecophon Acoustic Ceilings

Architect Awarded Prof Nael Bunni Medal

Architect Eimear Hanly from Douglas | Wallace Galway was awarded the Professor Nael Bunni Medal for achieving the highest combined result in coursework submitted during the year as part of a Post Graduate Diploma Course in Construction Law and Contract Administration which she studied at Trinity College Dublin and passed with a 'Distinction' in August 2003. Eimear is originally from Corofin Co Galway. Douglas | Wallace is a multi-disciplined

architecture, design and project management company with 70 employees based at offices in Galway, Dublin and London. Established in 1982 by Alan Douglas and Hugh Wallace, the company has specific expertise in retail, leisure hospitality and workplace environments. It encompasses design and implementation through to specialist management services for a portfolio of international brands.
Contact:
www.douglaswallace.com

Polytherm at Plan Expo

Polytherm Heating Systems designs and supplies underfloor heating systems to the residential, commercial and industrial markets (see *BSNews* September 2003). Formed in 1999 following the success of the underfloor division of its associate company Hevac, Polytherm systems and components are based on top German technology and experiences over many years.

The full range of products and services provided by Polytherm will be presented at the forthcoming Plan Expo 2003 which takes place at Simonscourt, RDS, from Thursday 6 November to Saturday 9 November.

Contact: Seamus English, Polytherm.

Tel: 01 - 419 1990; email: info@hevac.ie

Aquanale 2003

Aquanale — the international trade fair for sauna, pool ambience — will run from 5 to 8 November 2003.

Contact: www.aquanale.de

Win a Sanyo DVD Reader competition

Enter our reader competition and you could win a fantastic DVD player in our prize draw. Simply answer the questions and complete the details, copy and fax back to BS News on 01 288 6966.



October competition

- 1) Which English 2nd division football team has Sammy McIlroy left the Northern Ireland Managers job to take over?
a) QPR ☐ b) Brighton ☐ c) Stockport ☐
- 2) When is the AGM of the CIBSE Republic of Ireland region to be held?
a) Thur 26 Feb 2004 ☐
b) Thur 4 Mar 2004 ☐
c) Thur 8 Apr 2004 ☐

3) As reported in last months BS News, by what percentage, according to Ireland Business Banking Job Index, were adverts for construction jobs in July 2003 up from July 2002?

- a) 28% ☐ b) 37% ☐ c) 46% ☐

4) How many years has Pope John Paul II been in office?

- a) 10 years ☐ b) 25 years ☐ c) 30 years ☐

5) Which country has just joined the space programme?

- a) China ☐ b) Japan ☐ c) Korea ☐

Name: _____

Company: _____

Address: _____

Postcode: _____

Email: _____

Tel: _____

Fax back to BS News on 01 288 6966

Notes: Competition open to anyone over the age of 16.

Sponsored by
SANYO
AIR CONDITIONERS

John Smartt Wins Inaugural WPC Scholarship

John Smartt, Senior Plumbing Lecturer at DIT Bolton Street, has won the first ever World Plumbing Council Scholarship. John is widely known and respected throughout the building services sector, both nationally and internationally, and has been involved in plumbing training for 24 years. In June this year he was elected as the Chief Plumbing Technical Expert for the 2005 World Skills Competition in Finland.

The WPC Scholarship, established in 2003, is aimed at male or female plumbing trainers wishing to visit a country for the purpose of researching and furthering plumbing training and methodologies. The purpose of the Scholarship, which has a value of US\$5,000, is consistent with the WPC's objective of promoting and assisting plumbing industry education and training, and facilitating international recognition of competencies and standards.

The Scholarship will provide the opportunity to live and work in the cultures of other countries and to increase global awareness of the contribution of plumbing to society. John Smartt, a Past-President of the UK's Institute of Plumbing, submitted the United States as his chosen country, a choice which the WPC said "was supported by sound reasons ('to study their methods of plumbing training and its extensive use of

IT technology in a very large country with a geographically widely spread population') and that the results of such a study would be of interest to WPC members generally."

The WPC was also impressed by John Smartt's passion for his subject and his future career goals which, he says: "will continue to be concentrated on improving the quality and quantity of plumbing training and education, firstly in my own country as Chief Examiner in Plumbing for the Irish Department of Education and secondly and ever more importantly nowadays, throughout the world especially in developing countries in the Far East and on the African continent....through the World Plumbing Council".

Applications open for 2004

Applications are now invited for the 2004 Scholarship with full details and an application form available at the WPC website, www.worldplumbing.org

Alternatively, contact the World Plumbing Council Secretariat at: 64 Station Lane, Hemchurch, RM12 6NB, England. Tel: 0044 1708 472791; Fax: 0044 1708 448987; Email: secretariat@worldplumbing.org

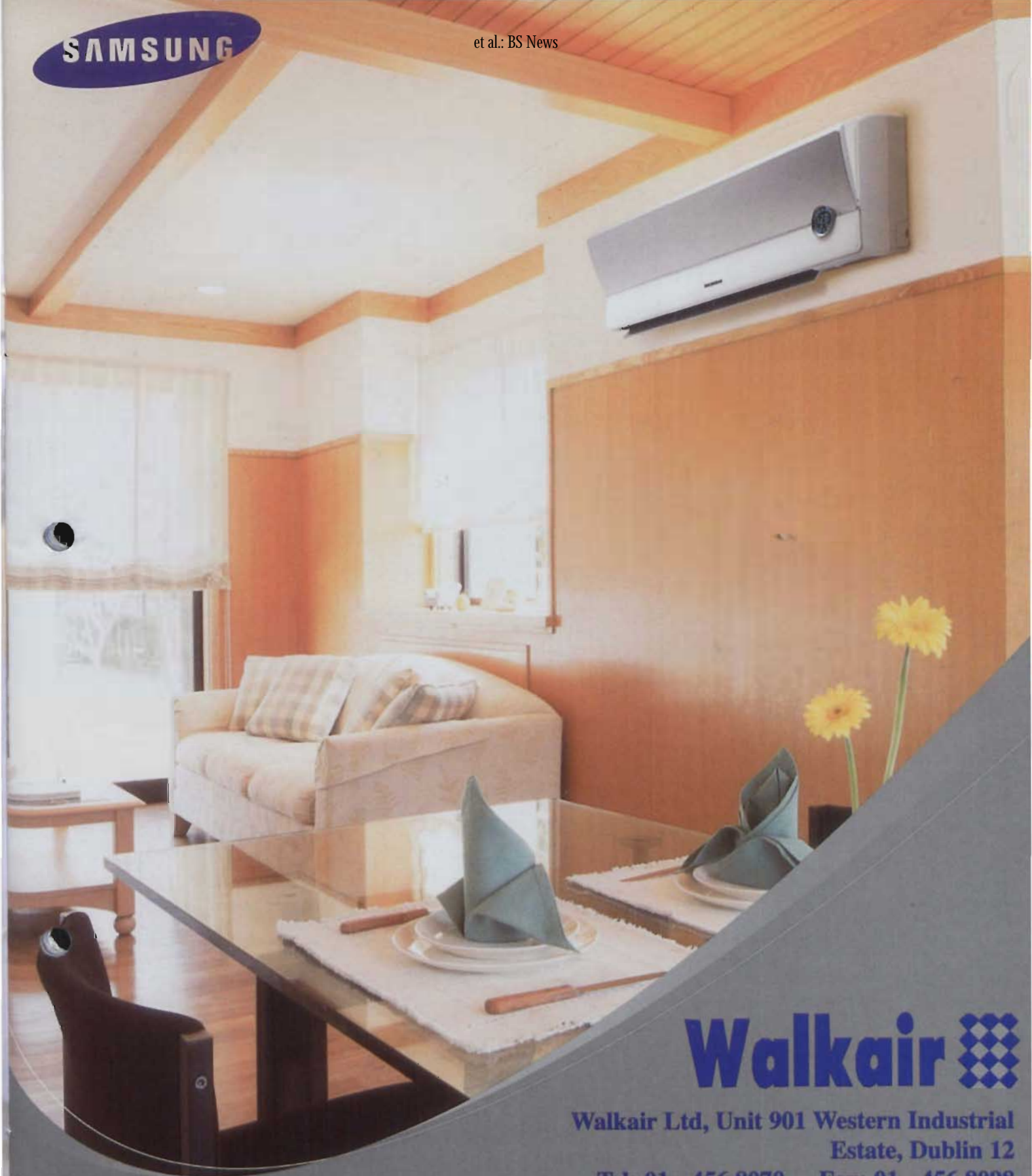
Applications close on 30 June 2004 and the successful applicant will be announced no later than 30 September 2004.



John Smartt, DIT, Bolton Street, pictured with the then President of the Institute of Plumbing, Tony Kite, when he received his Master Plumber Certificate in 2002

SAMSUNG

et al.: BS News



Walkair

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Estate, Dublin 12**

Tel: 01 - 456 8070 Fax: 01 - 456 8098

Email: sales@walkair.ie

Web: www.walkair.ie

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Bio nizer Series

Published by ARROW@TU Dublin, 2003



The Chartered Institution of Building Services Engineers

Republic of Ireland Region Events For 2003-2004

NOTE: Changes to this event programme will be indicated on the website — www.cibseireland.org

DATE	DESCRIPTION	VENUE	PRESENTED BY
Thursday, 2nd October 2003	Annual Student Awards — DIT, Kevin Street	DIT, Kevin Street	
Thursday, 16th October 2003	ESG Lecture: “Duplicate CPC Requirements for High Protective Conductor Current IT Equipment”	DIT, Kevin Street	Tony Sung
Thursday, 23rd October 2003	Education Lecture: “Continuing Professional Development Support for Engineers”	IEI, Clyde Road	Philip Riseborough
Thursday, 6th November 2003	SLL Lecture: “Industrial Lighting”	DIT, Kevin Street	Ole Hoem
Thursday, 13th November 2003	MSG Lecture: Pat Benson Memorial Lecture: “Building Thermal Design Using Spreadsheet Programs”	DIT, Bolton Street	Louis Demetriou
Thursday, 27th November 2003	ESG Lecture: “Local Sustainable Community Energy”	DIT, Kevin Street	Allan Jones
Friday, 5th December 2003	Celebrity Lunch	The Schoolhouse Restaurant	TBA
Thursday, 15th January 2004	MSG Lecture: “Wind Convecton Heat Pumps: Experimental Testing and Performance Modelling”	IEI, Clyde Road	Donal Finn
Thursday, 29th January 2004	ESG Lecture: “Health and Safety — an Electrical Perspective”	DIT, Kevin Street	Richard O’Rourke
Friday, 20th February 2004	CIBSE Biennial Ball	Burlington Hotel	
Thursday, 26 February 2004	Annual Student Awards — DIT, Bolton Street	DIT, Bolton Street	
Thursday, 4th March 2004	MSG Lecture: “Environment Friendly Integrated Building Design”	IEI, Clyde Road	Owen Lewis
Thursday, 1st April 2004 Friday, 2nd April 2004 Saturday, 3rd April 2004	SLL International Symposium	DIT, Kevin Street	TBA
Thursday, 8th April 2004	Annual General Meeting	IEI, Clyde Road	

ESG = Electrical Services Group

MSG = Mechanical Services Group

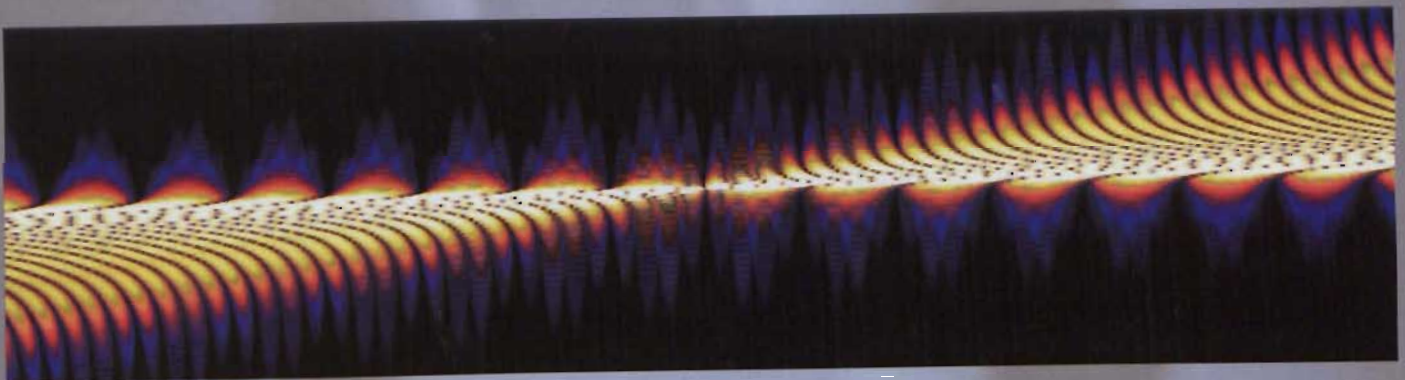
SLL = Society of Light & Lighting



noise control & research laboratories



Making Sound Sense ...



... of Sound Waves



A MEMBER OF THE AcTECH GROUP

Research-Based, Accredited, Acoustic Solutions

Society's concern for environmental noise protection has increased and products are now being judged as much for their acoustic properties as for other technical or aesthetic considerations. Whether in commerce, industry or government, clients are demanding that products are certified as meeting stringent acoustical limits. Moreover, they are also insisting that verification tests are conducted in a recognised laboratory in accordance with EU or International standards.

NCRL's laboratory is one of the most up-to-date in Europe for both acoustic and aerodynamic testing. It complies with all relevant international codes for testing and certification, and is also equipped for original research and development with production facilities for prototype manufacture of certain designs. Measurements cover everything from sound power/pressure levels to sound transmission and absorption.

The NCRL laboratory facility enables us to test and develop new and existing products for acoustic verification and suitability for various architectural, building services, industrial and OEM applications. These include evaluation of noise-reducing "cab-kits" for the motor, public transport, off-road and construction plant vehicles, to more detailed "reduction at source" engineered programmes.

When it comes to acoustics many clients think that the most expensive product is required. However, this is not necessarily so. A less expensive option may give better acoustics, depending on the area of application.

Therein lies the real strength of NCRL ... we provide tailored research-based, accredited acoustic solutions.



Auditorium at Dublin City University



Studio at WLR radio station

Sound solutions for motor and public transport vehicles



AcSAB™ — spaced absorption board designed and tested by NCRL



Sound solutions for off-road vehicles

Six Acoustic Chambers

The primary aim of NCRL is to carry out detailed and precise measurements of:

- (a) Acoustic characteristics of materials, structures and sound sources.
- (b) Insertion loss of silencers.

These measurements are carried out in accordance with the relevant IS EN, ISO, BS, ASTM and AMCA standards. They are then used to perform continuous tests on standard samples for absorption, sound transmission loss, and sources for sound power output. This is to demonstrate that results are repeatable within the tolerances specified in the relevant standard.

The facility comprises six acoustic chambers as follows:—

- ▲ Large Receiver Room — 288m³
- ▲ Small Receiver Room — 150m³
- ▲ Source Room — 69m³
- ▲ Vertical Suite — 52m³
- ▲ Intensity Chamber — 26m³
- ▲ Mini Reverberation Room — 35m³



Above and below — Testing office at NCRL



View through the various chambers showing their inter-connection
Inset: Sound power test equipment



Overview of the NCRL Laboratory showing the various acoustic chambers

Confidentiality Assured

NCRL assists clients in obtaining accurate and reliable test data as well as undertaking research and development programmes on new and existing products. All research and tests carried out by NCRL are treated in the strictest confidence, are presented in a formal report, and remain the sole property of the client. The results of the tests on a range of products enables them to be acoustically rank-ordered and therefore assists the client in establishing priorities for marketing or further research and development.



About AcTech Group

The AcTech Group of companies comprises VenTac & Co Ltd; NCRL Ltd; and AcTech Europe Ltd, all of which are located in Blessington, Co Wicklow, Ireland. In addition, the Group has a UK operation, AcTech UK Ltd, with headquarters in Scotland, manufacturing facilities in Somerset, and AcTech Acoustic Technologies Inc based in Massachusetts, USA.

AcTech® designed mini
reverberation room



To date AcTech Group has invested in excess of €1.2 million in the new NCRL Acoustic Research Laboratory

An Tánaiste, Ms Mary Harney, TD, performing the official opening of the NCRL Acoustic Research Laboratory



noise control & research laboratories



Noise Control & Research Laboratories Ltd

Fitzwilliam House, Industrial Estate, Blessington, Co Wicklow, Ireland

Tel: +353 45 851 500 Fax: +353 45 851 501

email: info@ncrl.net

www.ncrl.net

Negotiated Energy Agreements The Way Forward

Ireland's energy sector contributes to over 60% of the nation's greenhouse gas emissions, while industry accounts for 25% of all energy-related CO₂ emissions. As a result, there is considerable potential for emissions reductions within the industrial sector through improved energy efficiency. Apart from the obvious environmental benefits, a company's

exposure to additional costs under the terms of the imminent carbon tax legislation would also be reduced.

As we focus on industrial and commercial boilers in this issue of *BSNews*, it is appropriate that we do so to coincide with the publication of a new report by Sustainable Energy Ireland (SEI) into Negotiated Energy Agreements. According to



Dr Ken Macken, EPA with Erc Healy, St James' Hospital; and Prof Frank Convery, Chairman, SEI

David Taylor, Chief Executive of SEI, negotiated energy agreements with industry in Ireland have the potential to reduce a company's exposure to carbon tax, and to achieve a reduction in CO₂ emissions twice that achieved by a tax alone, thereby protecting the competitiveness of Irish industry.

The report produced by SEI highlights the results of an 18-month pilot study testing the application of negotiated agreements with industry in Ireland. Commenced in early 2002 and brought to a successful conclusion by mid-2003, the pilot programme involved the active participation of 26 companies.

Negotiated agreements are agreements between an individual firm, or group of firms, and the Government aiming to achieve substantial energy and emissions reductions "beyond business-as-usual". The

approach is based on firms committing to strong action and adopting best international practice in energy efficiency and reducing greenhouse gas emissions. Such agreements are already in place in a number of EU member states, including the UK, Netherlands and Denmark.

The Negotiated Energy Agreements pilot study developed and tested a framework of negotiated agreements suitable for conditions in Ireland. The aim of the programme was to develop agreements in a collaborative manner with the participating companies, to test these agreements for acceptability, and to explore their likely impacts, costs, efficiencies, and interactions with issues such as competitiveness.

The National Climate Change Strategy proposes the introduction of a carbon/energy tax on all fossil fuels. In order both

Participating Companies

Aer Rianta	Dublin
Aughinish Alumina	Limerick;
Cadbury	Coolock, Dublin
Cambrex Profarmaco Cork	Little Island, Cork
Dawn Meats	Co Mayo
GE Superabrasives	Dublin
Glanbia Ballyragget	Co Kilkenny
GlaxoSmithkline	Cork;
Green Isle Foods	Naas, Co Kildare
Hewlett-Packard	Leixlip, Co Kildare
Janssen	Little Island, Co Cork
Kepak	Co Meath
Leo Laboratories	Dublin 12
Micro-Bio (Ireland) Ltd	Fermoy, Co Cork
Millipore	Co Cork
Novartis Ringaskiddy Ltd	Ringaskiddy, Co Cork
Pfizer Ireland Pharmaceuticals	Little Island, Co Cork
Pfizer Ireland Pharmaceuticals	Loughbeg, Co Cork
Servier Laboratories	Arklow, Co Wicklow
Smurfit Paper Mills	Dublin
St James's Hospital	Dublin
Transitions Optical	Tuam, Co Galway
Tyco Healthcare	Co Dublin
Unilever Best Foods Ireland	Dublin
Wyeth	Co Kildare
Yeast Products	Dublin

carbon/energy tax on all fossil fuels. In order both to maximise the emissions abatement benefit, and to mitigate the negative impact of such a tax on industrial competitiveness, negotiated agreements can play a vital role.

Among the key findings of the pilot programme are:

- Significant energy efficiency gains of between 5.4% and 17.1% achieved by participating companies. This equates to total potential reductions in industrial annual CO₂ emissions of 640,000 tonnes. The results of the pilot study are in line with the higher end of what has been agreed in other agreements measures across Europe;
- The total savings achieved by participating firms outweigh the total costs invested for project implementation.



Tanya Harrington, IBEC with David Taylor, CEO, SEI; and Damian Clancy, Aughinish Alumina

Speaking about the pilot report, Mr Taylor said: "As climate change becomes a more pressing environmental policy issue, Government is in the process of considering and implementing a range of measures, including the proposed introduction of a carbon tax in 2005, while remaining committed to adopting the most

effective means to meeting our international commitments. Considering the present and future needs of industry, it is vital to have recourse to a variety of approaches that allow firms the flexibility appropriate to making their full contribution to this goal, while minimising the cost and competitiveness impacts". He continued: "The Negotiated Energy Agreements Pilot Programme has established the viability and potential efficacy of a negotiated agreements measure as part of a climate change policy for Ireland, achieving greenhouse gas abatement impacts significantly beyond those likely to arise from

a tax alone. It can also protect competitiveness by offering a tax exemption structure for participating firms, and especially for energy intensive firms or firms with large energy costs. Based on its collaborative approach, firms also view the agreements as desirable, and are willing to commit to investments with much longer paybacks and costs per tonne of CO₂ than a 'business as usual' approach".

Going forward, based on an analysis of Irish industry, approximately 650 sites could potentially participate in negotiated agreements, representing over 40% of all energy used in the industrial sector. This would result in annual savings of 640,000 tonnes of CO₂.



Andrew Parish, Project Co-ordinator, SEI with Liam McLaughlin, Eirdata; and Kieran O'Keefe, Spirax Sarco

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air heaters 30-415 kW

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Tel: 026 - 45334; Fax: 026 - 45383

INFRA LINE

Suspended flexible radiant
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INFRA

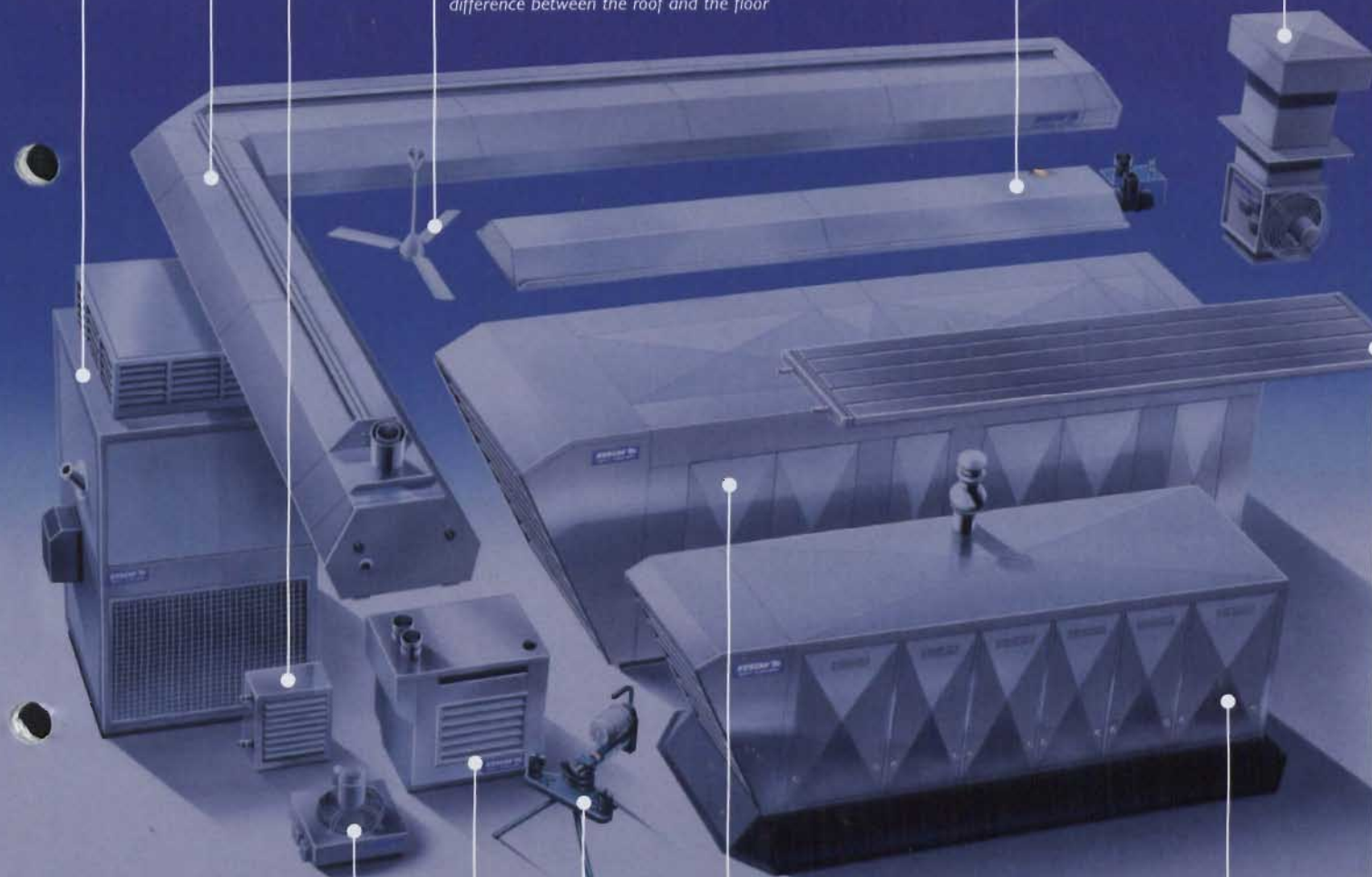
Suspended radiant heaters
12-32,4 kW

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Indirect hot water, steam or thermal oil
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Reduces by recirculation the temperature
difference between the roof and the floor

**ECOFAN**

Reduces by recirculation the
temperature difference between
the roof and the floor

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Direct gas-fired air heater, with atmospheric
burner and centrifugal fan; 20-370 kW,
bigger capacities are available on request

CALFLO

Direct gas-fired make up air heater,
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GS

Direct gas-fired air heater with
atmospheric burner and axial fan;
20.4-95.8 kW

GC

Direct gas-fired air heater with
atmospheric burner and centrifugal fan;
20.4-95.8 kW

G

Direct gas-fired duct heatexchanger
module with atmospheric burner;
20.4-95.8 kW

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The pipe bending machines bends
everything up to 4" both manually or
electrically operated machines available

INFRA AQUA

Flat radiant panels for ceiling suspension;
capacities are available on request

Chappee, Hamworthy, Sime, State & Benson from Hevac Oil Pumps – the pressure is on

When it comes to commercial boilers Hevac offers specifiers and installers a formidable armoury of solutions, irrespective of the application or requirement. The composition of its product portfolio has been carefully structured to ensure that all needs can be satisfied with high-quality, brand-leading boilers from some of the world's foremost manufacturers. These include Chappee, Hamworthy, Sime, State and Benson. Brief details of the product ranges of each are as follows:—

Chappee — CICH of France manufactures the Chappee range of boilers which includes sectional cast iron, steel commercial, and industrial hot water boilers.

The Arizona reverse-pass steel boiler with outputs ranging from 80kW to 2500kW, and the renowned NXR3 and NXR4

cast iron boilers with outputs ranging from 90kW to 800kW, ensure high efficiency, quality boilers for every commercial and industrial application.

Hamworthy — Hamworthy has been the UK's leading boiler manufacturer for more than 30 years, producing high-quality commercial boilers and associated equipment for customers in both the private and public sectors.

Hamworthy is BS EN ISO 9001 accredited and supplies European CE Certified boilers, offering a wide range of modular systems. Hamworthy also manufactures high-efficiency atmospheric condensing and pre-mix modular boilers in a variety of configurations.

Hamworthy gas-fired boilers are suitable for both natural gas and LPG, or alternatively there is the power flame series solutions using oil, gas or dual fuel.

Complementing the Hamworthy boiler portfolio is a range of supplementary products such as boiler sequence control systems, direct gas-fired water heaters, flue design options.

Sime — Sime is the largest manufacturer of cast iron boilers in Italy, the production plant in Verona being one of the largest and most sophisticated in the world.

The Sime product range

includes sectional boilers with outputs ranging from 17.5kW to 287kW for use in association with pressure-jet oil or gas burners.

Also available from Sime is a comprehensive range of cast iron atmospheric gas boilers for use with LPG and natural gas, with outputs ranging from 22kW to 287kW.

State Water Heaters — State Water Heaters is established for well over 50 years. State offers a comprehensive range of electric, gas and oil fired water heaters for supplying domestic hot water to commercial, industrial and domestic applications.

Using the latest technology in product design, State's commercial range of water heaters utilises the Turbo Force Ring, States patented cold water inlet device, the only proven way to effectively reduce sediment build up in a water heater automatically.

With storage capacities of up to 376 litres and recovery rates of 2226 litres per hour (temperature rise of 44°C), an abundance of hot water is available to satisfy a variety of applications.

Benson Heating — Benson Heating represents quality, efficiency and economy in the air movement industry. Products are designed to meet the high standard required by today's environmental engineers. Their extensive range includes cabinet air heaters



From the extensive Hamworthy range of commercial and industrial boilers distributed by Hevac

for oil and gas operation with nominal heat outputs of 29kW to 381kW. Benson's extensive range also includes gas and oil fired unit heaters including a range of room sealed unit heaters and de-stratification fans.

Full details on the entire range — plus copies of Hevac's comprehensive new full-colour brochure — are available from the company.

Contact: Karl Carrick, Hevac.

Tel: 01 - 419 1919;

email: karlc@hevac.ie

Cork: Tel: 021 - 432 1066.



Sime boiler from Hevac's commercial and industrial range



Chappee NXE3 cast iron boiler from Hevac

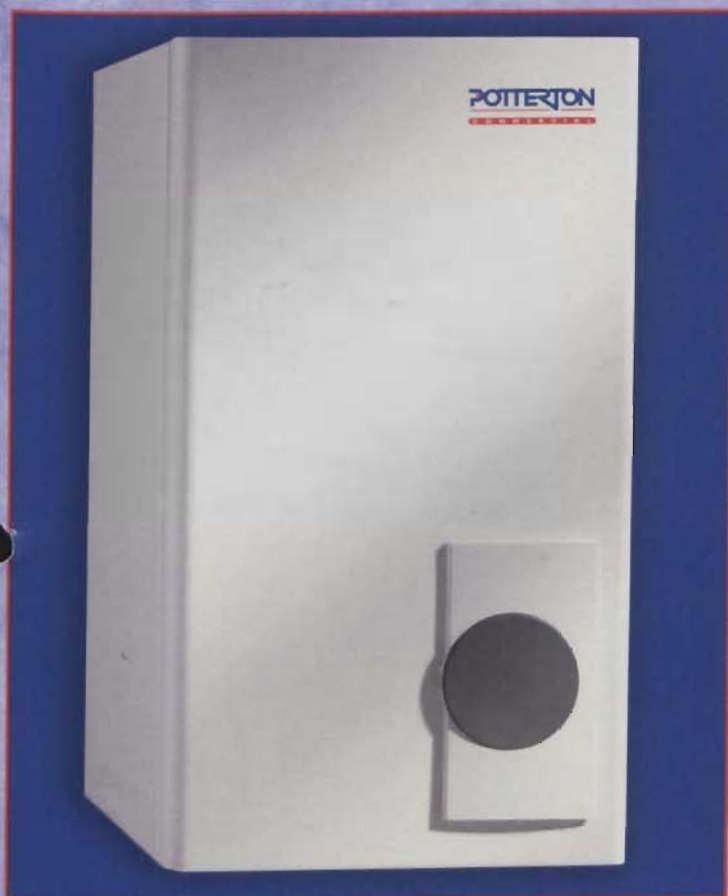
heating specialists

the definitive commercial boiler range

Paramount

Wall hung fully modulating gas fired condensing boilers

40kW, 60kW, 80kW



- ❑ High efficiency
- ❑ 109% at 40°C/30°C
- ❑ Qualifies for enhanced capital allowances
- ❑ Lightweight silicon/aluminium alloy
- ❑ Lifetime guarantee*
- ❑ Long-life proven design
- ❑ Exceptional, compact design
- ❑ 40kW, 60kW and 80kW all only 480mm wide
- ❑ Easy to use controls
- ❑ Versatile fluing options
- ❑ Cascade flue available
- ❑ Modular pipework headers and stands
- ❑ Pump options
- ❑ Sequence/Zone controls available
- ❑ LPG option available



Potterton Myson (Irl) Ltd
Belgard Road, Tallaght, Dublin 24

Tel: 01 - 459 0870

Fax: 01 - 459 0880

email: post@potterton-myson.ie

MARK High-Efficiency Heaters



Life-cycle savings for Mark Eire equipment make initial cost outlay very attractive

The energy supplied to a traditional gas-fired heater is not all used. Part is expelled to the atmosphere as water vapour, mixed with exhaust gases via the flue. These emissions add to the greenhouse gases in the atmosphere.

With the Mark condensing and premix unit these losses are utilised by condensing the water vapour to become water once again. The retained energy is used to give the unit an efficiency of 105% on low fire, and 94.7% on max fire, calculated on the basis of lower calorific value. This can be shown

in figure 1.

Consider also the following case studies:—
Warm Air Heaters —
 Mark Eire has sold 15,000 of these units, in three sizes. The middle size is a DD10-8 ECM3-4 that replaced a DD10-8-PSC + trial control. Air volume varies as a function of outside temperatures and, when not used as a heating device, the blower assures the mechanical home ventilation of 300m³. Tests carried out over one year in identical situations showed an average 500W difference between the two solutions (energy consumption varies between 50% and 20% of normal blower). The overall reduction was from 7.3kW down to 2.1kW. The savings of 5.2kW pays twice the difference in price between the two units. An additional advantage was the considerable

reduction in noise level. When working (at 300m³) noise is down from 38dba to 31dba.

Clean Room —
 Production of electronic parts in a 2000 sq m cleanroom plant — 550 units installed at approximately 900m³ each — reduced to 500m³ when not in operation. Watts saved per hour is approximately 200W per unit, over one year. This translates to a saving of over one million kW when the 550 units are taken into account. Furthermore, when installing, wiring could be reduced by 127km by the telephone system of the TAC linkage. Moreover, exact pressure indication on each fan permits survey and replacement of filters only when required, eliminating labour and unnecessary filter replacement.

Heat Pumps for Combined Cinema Complexes — Units vary between four and 10 fans, half for evaporation and half for condensation. Independent programmed control of

the airflow enables a COP of close to 5 instead of the 3.2 with standard fans. The perfect air volume control permits the optimisation of the cooling system as no variation of the airflow happens during the operation. Noise levels are considerably down.

Hospital Operating Rooms — For each operating theatre a system with four DD 9-7TH assures perfect airflow control, whatever the pressure drop of the filters, at 3200m³ hence a perfect speed control over the filters (0.4m/sec). Focus was on the reduction of the dba levels (5dba down against EBM units) while the safety is assured as, when one fan fails, the three others compensate at 1800m³ immediately when airspeed goes down. Obviously, watt usage is down but this was not a point of consideration.

Contact: Mike O'Donoghue, Mark Eire.
 Tel: 026 45334;
 email: sales@markeire.com

Figure 1

Are people willing to pay more for this technology?
 They most certainly are when you consider the savings over the life cycle of the installation, normally 15 years, used for this calculation.

FOR ILLUSTRATION ONLY: TAKE A BUILDING 50 METER x 60 METER x 8 METER

Design temperature 24°C with night set back temperature for frost protection.

Heat loss calculated: 345 Kw / Hr

Total energy consumption during daytime, which includes electricity: 77499m³ per year.

Note Electricity equivalent converted to m³.

Consumption with high efficiency condensing unit over its life cycle: 1046237 / m³

Saving over its life cycle: 104624 approx.

Co² Produced Traditional heater: 2174 Tonne

Co² Produced High efficiency unit: 1956 Tonne

Co² saving: 218 Tonne



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Hevac Limited

INDUSTRIAL & COMMERCIAL HEATING

EVANS
UNIVERSAL



sime
Heating Equipment



CHAPPEE



state
WATER HEATERS



CHAPPEE



AMWORTHY
Heating products



BENSON

As Ireland's foremost leader in the supply of boilers, burners, heaters and flues, we at Hevac clearly recognise the importance to you of tailor-made solutions for each and every application.

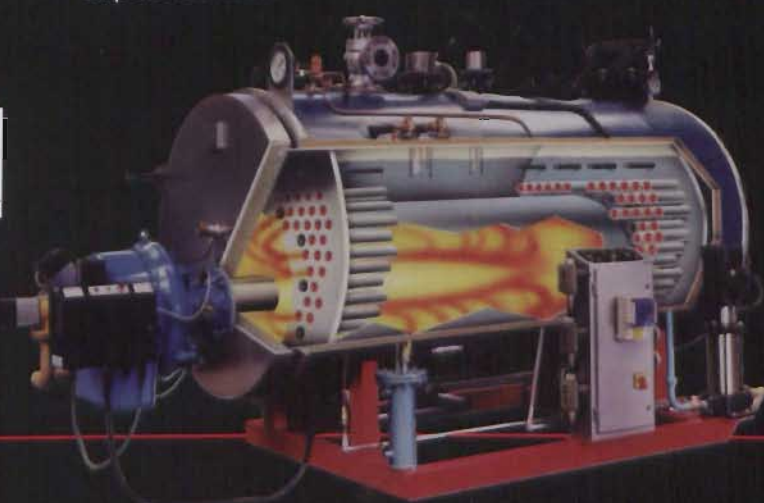
We believe success starts with a clear understanding of a customers wants and needs. To this end fostering a relationship with all of our clients from the outset is seen as paramount in achieving the best quality standards.

You can be confident that all the wealth of product knowledge and practical experience attained at Hevac is at your disposal. From initial consultation through product identification, installation and final commissioning. No one will work harder with you because we are proud of our reputation and continue to strive for standards in excellence. We know you expect no less.

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South Ring West Business Park, Cork. Tel: (353) 021 - 432 1066. Fax: (353) 021 - 432 1068.

Paramount Breaks New Ground



Potterton Paramount utilises high-tech controls and is available in 40kW, 60kW and 80kW outputs

Potterton Commercial is part of the Baxi Group and specialises in the design and manufacture of boilers for a wide range of commercial applications. The overall range spans boiler outputs from 24kW to 250kW and includes pressure jet boilers; atmospheric gas boilers; condensing gas boilers; modular pre-mix boilers; skid-mounted packages; wall-hung boilers; heat recovery units; and calorifiers.

Breaking new ground in commercial heating engineering, the Potterton Paramount is the ultimate wall-hung condensing boiler. Using the very latest heating technology the Paramount marks a new era in boiler design and is perfect for applications where space

is at premium. It is lightweight, compact and easy to install.

Available in three outputs — 40kW, 60kW and 80kW — the Paramount utilises hi-tech next generation intelligent controls, which are able to communicate with LON, EIB and LPB protocols used in most Building Management Systems. Suitable for modular applications, the clear and logical layout of components facilitates ease of installation, use and maintenance.

Efficiency — Advances in heat exchanger design and burner technology generate net operating efficiency levels up to 109% at 40°C/30°C Part L2 compliant. An in-built weather compensation facility optimises seasonal efficiency (full

modulation down to 25%) and encourages the boiler to condense whenever possible.

Superior heat exchanger — A unique monoblock, modular design offers optimum heat transfer, long-lasting performance and excludes the possibility of leaks. Exceptionally compact, lightweight (with weight from 58kg) — coupled with a slim, sleek design — the Paramount is perfect for installations where space is at a premium. All boilers are 480mm wide.

Controls — The user-friendly control panel gives clear indication of boiler status and reports any faults. Additional units can be mounted in the boiler control panel or externally from the boiler. **Flue Versatility** — There is a comprehensive range of flue options including balanced flue, concentric vertical and conventional flue.

Supplied for use with natural gas, with optional conversion kit to LPG, the Potterton Paramount range is suitable for open-vented systems with a minimum water pressure of 0.5 Bar (5 metres vertical head); and sealed (pressurised) systems with a maximum working pressure of 3-bar (40kW model) and 4-bar (51 & 80kW models).

Contact: Vincent Broderick, Potterton Myson (Ireland).
Tel: 01 - 459 0870;
email: post@potterton-myson.ie

Full Range

Apart from Paramount, the Potterton Commercial range includes an all-embracing portfolio of innovative, technology-driven boilers. Brief details are as follows: —

ATMOSPHERIC GAS BOILERS

Derwent Compact A — From 50kW to 464kW;

Derwent Premier — From 64kW to 193kW;

Derwent Prestige — From 66kW to 348kW.

CONDENSING BOILERS

Paramount — From 49kW/60kW/80kW;

Derwent Condensing — From 69kW to 373kW;

Eurocondense plus — From 90kW to 250kW.

UNIVERSAL BOILERS

Slimline Modular — From 70kW (single application) and 140kW to 560kW (modular application).

PRESSURE JET BURNERS (GAS OR OIL)

Rapido — From 24kW to 280kW;

NXR3 — From 90kW to 290kW;

NXR4 — From 320kW to 800kW;

ISIS he — From 440kW to 1172kW.

Arizona — From 100kW to 2500kW.

Old Conna

Sponsor: Valve Control Systems

Overall Winner	Tony O'Leary	(13)	34 Points
Class 1	1-11		
	1st	Michael Morrissey (8)	32 Points
	2nd	Brendan Bracken (9)	31 Points
	3rd	Michael Kearney (11)	30.5 Points
Class 2	12-15		
	1st	Paul Allen (14)	30 Points
	2nd	Dave Cranston (15)	29 Points
	3rd	Jim Smith (13)	28 Points
Class 3	16+		
	1st	Ray Byrne (17)	31 Points
	2nd	Bernard Costelloe (17)	30 Points
	3rd	Des O'Gorman (25)	28.5 Points
Point Nine		Michael Murphy	17 Points
		Jim Bollard	15 Points
Back Nine		Brendan Keaveney	18 Points
		John Lavelle	17 Points
Visitors		Des Binley	40 Points



Bob Daly, VCS with Paul Allen, 1st Class 2, and BTU President, Ray Byrne



Bob Daly, VCS with Brendan Bracken, 2nd Class 1, and BTU President, Ray Byrne



Overall Winner, Tony O'Leary (right) with BTU Captain, Jim Smith and BTU President, Ray Byrne



Bob Daly, VCS with Bernard Costelloe, 2nd, Class 3, and BTU President, Ray Byrne



Michael Morrissey, 1st Class 1 with Bob Daly, VCS and BTU President, Ray Byrne
Published by ARROW@TU Dublin, 2003



Bob Daly, VCS with Des O'Gorman, 3rd, Class 3, and BTU President, Ray Byrne

Kevin Kelly, DIT. Email: kevin.kelly@dit.ie

At Last ... Electrical Services Engineering Recognised!

Kevin Kelly is Course Director for the whole-time Electrical Services Engineering course at DIT, Kevin Street. He was instrumental in devising the content and format of the courses and was also involved in the design of the equivalent part-time programme.

This month he outlines how the courses evolved and reports on the progress of the whole-time course, DT 244, to date.

Thanks to a far-sighted initiative by the Department of Electrical Services Engineering in DIT Kevin Street, a major gap in the education of dedicated electrical services engineers has been plugged. Despite the problem being highlighted as far back as a decade ago, both industry and engineering consultancies have had to recruit from traditional electrical engineering or building services courses, or from the ranks of suitably-qualified and experienced electricians. Consultant engineering companies and contractors had to provide costly in-company training for electrical engineering and building services graduates in order to bring them up to speed in electrical services. Companies often complained that by the time this happened the graduate had often moved to another company.

However, three years ago DIT Kevin Street finally addressed this issue through the design and provision of part-time and whole-time courses at Diploma and

Certificate level in Electrical Services Engineering. The first students to graduate from these courses were recently presented with their awards at a major industry gathering in the College (see photos). Plans are also in place to provide a degree in Electrical Services Engineering in the near future. Postgraduate and research opportunities are likely to be exploited in the longer term.

When designing the new course the views of a large number of companies representing interests such as manufacturing, the service industry and technical sales were surveyed, in addition to electrical contracting and consulting engineers. The course design team felt strongly that the course graduates should have a broad appeal to industry while also attaining the specific skills specified by contractors and consultants.

Modern industry wants graduates who can think critically, problem solve, communicate and negotiate, as well as design and manage. Careful course design, particularly in



Kevin Tracey, Chairman, CIBSE, Republic of Ireland Region with Graham Manly, Vice President, CIBSE; Professor Brian Norton, President, DIT and Dr David Carter, President, Society of Light & Lighting

assessment methods, has facilitated the development of these skills in graduates. Graduates will also possess a wide range of personal, interpersonal, communication, and management skills, in addition to the traditional technical/professional skills.

The above will ensure a well-rounded graduate capable of lifelong learning, who will be able to take up gainful employment in a diverse range of areas such as:

- Electrical Contracting;
- Electrical Services Design;
- Building Services Consultancy;
- Industrial Automation;
- Technical Sales;

- Engineering Systems Support for Manufacturing;
- Environmental control.

The DIT is establishing itself as a centre of expertise on electrical services engineering. The mix of people on the course committee is not only pushing the frontiers of engineering excellence, but also provides a wide base of educational and industrial experience. Most importantly, the committee is very open to change in matters of learning and teaching strategies. Innovative changes have taken place. A pilot DIT peer-mentoring programme is presently operating. The aim is to develop group cohesion, which will help retention rates on

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Electrical Services Engineering



DT244 Diploma Student of the Year Award winners with senior DIT staff



DIT President, Professor Brian Norton and the team of tutors from the Electrical Services Engineering Department with sponsors (see panel right) and Certificate Student of the Year Award winners



SLL President, Dr David Carter with sponsors and the SLL Lighting Award Student Finalists

the course and increase the performance of students

Total applicants for the whole-time programme DT 244 through the CAO this year was over 700, representing a 50% increase over last year. Modern methods of delivery including, e-learning, are used. Both whole-time and part-time courses are very student centred. Assessment is a combination of 50% continual assessment and 50% examination. Assignment and project work has been increased, allowing the teacher to become a facilitator and the students to take responsibility for their own learning.

The course ethos is a student-centred one with deep learning its goal. There is a careful balance between theoretical and practical laboratory work. Assignments are used to promote self-learning and develop problem-solving skills. The majority of the content of subjects such as AutoCAD, Computer Applications and Industrial Automation is delivered in a laboratory setting replicating industrial reality.

Project work is a major module in both years 2 and 3. The projects are designed to allow students inter-relate the different course components and construct their learning around their own experience and knowledge. Synthesis and application are higher order learning skills associated with graduates of the course. The acquisition of personal

and professional skills is also emphasised to ensure graduates will be able to perform to a high standard.

Student support is assured by appointing a staff mentor to each class group. The mentor monitors the student's progress, attendance and assignment completion on a regular basis. Consideration is given to mature candidates applying for exemption from year 1 and/or year 2. Applicants must satisfy the admissions board of their suitability but account is taken of equivalency and experiential learning.

The philosophy is to remove obstacles to entry and provide ladders of opportunity for students who have the ability to succeed, while maintaining the academic integrity of the course.

The modularity of the course design allows easy transfer from the part-time course to the whole-time and also in reverse.

Next month Kevin Kelly will report on the progress of K249, the part-time course.

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Removing the Mystery of Client Reporting

There appears to be a level of mystery surrounding the whole area of client financial reports. This is true both for Property and Facilities Management assignments. In the former a charge is levied on the tenants by the Property Managers for the management of the common areas of a multi-let building or area. In the latter case it is the charge of supplying facilities services to the occupant of a building.

The difficulty arises in appreciating the financial reports prepared, which reflect the costs incurred in a particular period, and these difficulties can be common to both the above services.

The level of knowledge seems to stop short of fully appreciating what is actually being presented.

There is no doubt that this situation is in part created by the fact that there are expense headings covering some very technical items such as "BMS and UPS maintenance" expenditure, and an appreciation of their importance has led to a reticence in questioning the costs involved. This is due both to a fear of getting lost in the technicalities involved and a fear that making savings could expose the entity to a risk far outweighing any potential saving. Additionally there are other expense headings referring to costs that individuals would not usually



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have come across elsewhere such as "Sinking Fund Reserves and Expenditure Reserve Provisions" and again there can be a fear of questioning expenditure which has been incurred in the past.

Another complication is that the final accounts are usually accompanied by either balancing credit or charge invoice, which include a large credit amount that is set off against the large debit amounts, giving rise to either a credit or debit invoice.

There is also the uncertainty of the quantum of the amount

of this final balancing charge or credit year on year, and the effects to the tenant's/occupant's Financial Statements of either a large expense or gain being charged to their Profit and Loss account depending on whether it is a balancing charge or credit respectively. There is another problem and this is the difficulty of adequately budgeting for these costs year on year.

In fact what is actually being presented, albeit in a slightly different format, is the financial cost of managing the operating costs of a building for a period of time.

The explanation of the large credit being offset against the expenditure in the balancing charge or credit invoices is simply the presentation of the total charge applicable for the period service charge less the amounts paid in advance.

In order to avoid these potential issues a more appropriate approach would be the preparation of a budget of anticipated expenditure for the coming year. It is essential to understand the items contained within the budget and those potential expenses that fall outside of the budget remit. This is important in order to control costs, as any additional items not allowed for in the budget will have to be paid for either when incurred or at the year-end and this is usually determined by the quantum of the additional



expenditure.

The budget will determine the level of funding required; this may need to be apportioned in the case of a multi-let property.

In most Facility Management assignments quarterly financial reports are prepared comparing the expenditure incurred against the budget and analysing variances. For many Property Management assignments, the financial results are prepared once a year. Therefore it is important to keep in touch with the property management company to inquire about costs and in most cases they should be able to give you an indication where they believe the costs are against budget at that point in time.

Overruns in expenditure giving rise to balancing charge

invoices tend to occur for two reasons.

The first is usually due to additional expenditure having to be incurred. This can arise with changes in expenditure requirements. A recent example of this was the effect of September 11th when many entities began to review their security arrangements and felt that it was necessary to increase their coverage. Other factors that can lead to increased costs would be the effect of "minimum wage" legislation.

The second reason is usually expenditure carried forward from the previous year. This arises because some property accounts are still prepared on an income and expenditure basis and income is only recognised as it is received and expenditure as it is incurred.

In the case of a balancing credit invoice, this arises where receipts exceed expenditure.

This can happen for two reasons: firstly where an item of budgeted expenditure was not incurred and secondly when either insufficient accruals or no accruals at all were provided for within the financial report for the period.

While it is more pleasant to receive a balancing credit than a balancing charge it is essential that the reason for the credit arising be known, as it will be little comfort a year later if a balancing charge arises due to insufficient accruing in the year of the balancing credit.

Bearing the above in mind the mysteries and potential pitfalls can be avoided if it is appreciated that the Client Report is broken down into various cost headings of managing a property for a period of time.

A budget should be prepared indicating the level of cost for the period. Any additional expenditure falling outside the budget remit should be flagged for inclusion within the budget or charged separately.

It is essential that the preparation of accounts should follow normal good accounting practice with the inclusion of accruals and prepayments to fairly reflect the costs pertaining to the period in question.

Specifying Quality Sound

Proper acoustics, the unobtrusive sum of all sounds, is essential for a "comfortable" environment. The sound level at any particular location is typically the sum of sounds emanating from many sources. Office equipment for example, contributes to the sound in the space, as do voices and the HVAC system.

It is easy to decide whether or not the aggregate sound in an existing environment is acceptable. It is simply a matter of listening. Designers face a much greater challenge when asked to create an environment that meets the occupants' acoustic needs. Not only must designers anticipate and specify the desired acoustic character of a finished space; they must also accurately predict the acoustical effect of the HVAC system.

What is considered "acceptable" sound varies dramatically with the intended use of the finished space. Obviously, a factory requires less stringent acoustics than a church, while an office has a different set of requirements altogether. But it is not enough to know the type of application involved. The designer must identify the variety of spaces that

exist within a particular building and determine the acoustical needs of each. Background sound, for example, provides privacy in an open-plan office by masking the sound of voices and equipment from adjacent areas. Yet this same level of background sound would be unacceptable for conference or board rooms in that same building.

Sound Power & Sound Pressure

"Sound power" and "sound pressure" are two distinct and commonly-confused characteristics of sound. Both share the same unit of measure, the decibel (dB), and the term "sound level" is commonly substituted for each. However, to understand how to measure and specify sound, the HVAC system designer must first understand the difference between these properties. Sound power is the acoustic energy emitted by the sound source, and is an absolute value. Like the wattage of a light bulb, sound power measures a fixed amount of energy. It is not affected by the environment.

Sound pressure corresponds to the brightness in a particular part of the room: the

intensity of the pressure disturbance created by the sound waves can be measured with a meter. The intensity is influenced by the strength of the sound source and its distance from the receiver. In the case of light, brightness is also influenced by the colour of the room, the reflectiveness of the walls and ceiling, and whether the bulb is shaded.

An Illuminating Analogy

Think of sound power as the wattage rating of a light bulb. Similarly, sound pressure depends not only on the sound power emitted by the source and the distance to the receiver, but also on whether the room is carpeted or tiled, furnished or bare. As with light, environmental factors like these affect how much sound reaches the receiver.

Relating Power To Pressure

Equipment sound power ratings are determined in an acoustics laboratory, usually by the manufacturer. Specific standards qualify testing facilities and methods to promote data uniformity and objective comparisons of different units across the industry. By contrast, sound pressure can be measured in an existing space with a sound meter, or predicted for a space not yet constructed by means of an acoustic analysis.

Since the only accurate sound data a manufacturer can provide is expressed as sound power, the challenge of designing for quality sound is to examine the effect of environmental factors

Octave Bands & Decibels

Sound is considerably more difficult to measure than temperature or pressure. Since it occurs over a range of distinct frequencies, or f , its level must be measured (or predicted in the case of an analysis) at each frequency to understand how it will be perceived in a particular environment.

Single-Number Descriptors

Given the complex nature of sound, it is not surprising that considerable work has been done to develop an effective system of single-number descriptors. The most frequently-used single-number descriptors are the A-weighting network, noise criteria (NC) and room criteria (RC). Despite their shortcoming, the single-number descriptors summarised below are valuable tools for defining sound and are widely used to specify acoustic requirements.

"A" Weighting

One simple method for combining octave band readings into a single-number descriptor is A-B-

C weighting. These weighting networks compensate for the ear's varying sensitivity at different frequencies. "C" weighting is applied to high-volume (loud) sound levels where the ear's response is relatively flat, while "B" weighting is applied to medium volume sound levels.

"A" weighting, which is used for low-volume (quiet) sound pressures, best approximates human hearing levels in the comfort range where no protection is needed.

Most sound level meters automatically calculate and display A-weighted sound values, providing a simple means of verifying acoustic performance. "A" weighting is often used to define sound in outdoor environments.

For example, local sound ordinances typically regulate dBA levels at property lines. Hearing-related safety standards written by such bodies as the HSE also commonly refer to A-weighted sound readings.

Noise Criteria

"Noise criteria" or NC curves are probably the most common single-number descriptor used to define the sound quality of indoor environments. Like the equal loudness contours on which they are based, the loudness along each NC chart curve is about the same. Each NC curve also slopes downward to reflect the ear's increasing sensitivity at higher frequencies.



Specifying Quality Sound

From our discussion of sound-related terminology, we can infer that specifying quality sound for an application requires us to:

- (a) Determine the desired acoustical character;
- (b) Choose an appropriate single-number descriptor, keeping in mind the limitations inherent in each numbering scheme.

For example, suppose an air-cooled chiller is to be placed adjacent to a building where a local ordinance limits sound to 50 dBA. Such a requirement might be stated in the specification as:

"The A-weighted sound pressure level shall not exceed 50 dB re 20 mPa, measured on the slow response scale, anywhere along the

property line. The period of observation shall be at least 60 seconds at each measurement location."

Analysis is Key

An important point: including a single-number descriptor in the specification means that someone must make an acoustic analysis to determine if the proposed HVAC equipment will satisfy acoustical requirements. To make such a prediction, the analysis must convert equipment sound power ratings to sound pressure and assess the effect of environmental factors.

Unless the application is extraordinarily simple, sound that reaches the occupied space will be altered by ductwork, room furnishings and the like. The validity of an acoustic analysis,

therefore, depends on the analyst's familiarity with construction details.

Putting It Together

Sound is one of three key ingredients that contribute to a comfortable building environment. Prerequisite to an effective specification of sound power levels are: (a) acoustic analyses of the HVAC system layout and building construction, and (b) an understanding of the single number descriptors used to define the acoustic nature of an environment.

The inclusion of sound performance in an equipment specification should automatically suggest an acoustic analysis. Ideally, the analysis should be made before the specification is written.

Acoustic requirements can then be included in terms of sound power, facilitating an "apples-to-apples" comparison of the products offered by various manufacturers.

Omitting this step means that each bidder must conduct their own analysis ... and each will make their own assumptions about how the building's construction will affect that analysis.

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Plumb Lines



Heard it on the grapevine ...

IS YOURS IN SPAIN OR PORTUGAL? — You know what, I'm feeling like the **poor relation** of the industry. There was a time when every second person you met had a weekend/summer pad down the **east coast**. Now that's old hat. Today everyone has a place in Spain or Portugal. But that's as it should be ... work hard, enjoy the fruits, and you know what **the begrudgers!**

GET WELL CATHY — Nice to see Cathy Ryan of **Air Enterprises** getting back into the groove. Cathy has been **poorly** for some time but is gradually returning to her old (young?) self. Watch out **Pat Byrne** ... now that the real boss is back in harness you'd better smarten up.

INEQUALITY COULD COST €50,000 — In an environment where discrimination claims have risen by 40% in the first six months of 2003 compared to the same period last year, it is vital that all employers sit up and take note of the implications of current **legislation**. Unless they are seen to address inequality and diversity in the workplace they face the risk of a

substantial fine, potentially up to €50,000 or more. In terms of **discrimination** in the Irish workplace today, the gender ground is still the largest category at 33%, with race now the second largest category at 22%, followed by disability at 19%. If in any doubt, consult your legal advisors.

ELECTRICAL SERVICES ENGINEERING — Thanks to **Kevin Kelly** and his colleagues at DIT, **Kevin Street**, electrical services engineering has finally been recognised. The first students to graduate from this **pioneering course** were presented with their certificates and awards at a major ceremony in Kevin Street earlier this month. The **interest** from industry was clearly reflected in the number of businesses who sponsored the occasion (see page 30)

NEED A PERSONAL ASSISTANT? — Small businesses and **sole traders** operating out of the office or home can now have someone to answer mobile calls and take **messages** at a fraction of the cost of employing an assistant. O2

Assistant provides a professional **personal** service to take messages when the user is unavailable. Seems like an excellent, **cost-effective** way of improving image and service.

SOUNDS SANYO — The winner of the *BSNews/Sanyo* DVD reader competition was James McLoone of Delap & Waller's Sligo office. See page 12 for this month's competition.

WATER CHARGES — At a time when a tiny minority of people are holding all of Dublin to **ransom** because of the introduction of bin-collection charges, think how they would react to the water charges now being considered in **the UK**. Just recently the UK Water Regulator gave warning that householders faced "potentially significant" increases in their annual **water charges**. The average water bill in the UK is the equivalent of €334 per household, with the proposed increase set to bring it up to €437. Our jails would be full if such charges were implemented here!

UK GRASS NOT GREENER — Soaring premiums for compulsory **workplace insurance** in the UK is hitting firms in a similar manner to the experience here in Ireland. Twelve months ago the **UK Government** promised to look into the so-called employers' liability **crisis** with a view to devising a solution. However, just like here, **costly** investigations and reports have done nothing more than identify what business already knows. Sound **familiar?**

Remember When? ...



The chances are that Gerry McDonagh of RSL does not ... after all, the year was 1978. Never mind Gerry, you are still looking good, though I hope you're fashion sense has kept up with the times!

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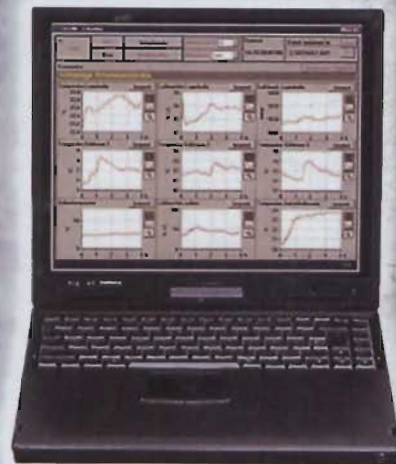
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